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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/586,707
Filing Date: January 14, 2005
Appellant(s): Breitenstein ET AL.

Tyler A. Stevenson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 09/06/11 appealing from the Office action mailed 06/29/11 (Advisory Action) and 03/11/11 (Final Action).

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-5 and 9-10 are rejected.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

US 6569933	Tonnvik et al.	05-2003
US 4842794	Hovis et al.	06-1989
US 4457775	Legge et al.	07-1984
US 5844042	Neri et al.	12-1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. Claims 1, 4-5, and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tonnvik et al. (US 6569933) in view of Hovis et al. (US 4842794) and in further view of Legge et al. (US 4457775), all listed on previous 892

As to claims 1, 4-5, and 8-9, Tonnvik (1:1-35, 3:1-65, 4:5-60, claims 1-6) discloses a process of producing low dust granulate of polymer additives such as hindered phenol based antioxidant and thioester based antioxidant, wherein additive ingredients in solid or liquid form are added to twin screw extruder (co-kneader) and heated and extruded from holes (4 mm diameter) to form strands, then the strands are transported to a water stream cooled granulator (also cools the granulates) consisted of two rolls and rotating blades to form granulates (comminuting). Tonnvik further discloses using fluidized bed for cooling (solidification) and transportation. Tonnvik discloses using two rolls for transportation followed by granulation via blade (Ex. 2).

One of ordinary skill in the art would obviously recognize to modify a roller with a polished smooth surface for compressing and facilitating the transfer of polymer additives for sequential granulating process. Although Tonnvik is silent on impressing, the rolling would inherently results in impressing and squeezing because of the pressure between rolls and the materials in between. One of ordinary skill in the art would obviously recognize that the materials transportation between rolls is the results of the friction between the materials and roll surface when rolls are rotating, and the friction is the results of the pressure inherently existed between the materials and roll surface and caused impressing and squeezing.

Tonnvik is silent on using shaping rolls having embossing lines and shaping rolls having grooves after squeeze rollers having smooth and polished surface followed by of claim 1.

Hovis discloses a process of preparing porous films with net-like patterns (1:5-15, Fig. 1-9, 1:58-68, 2:1-25) comprising polymers and other additives by passing extrudate of polymer composition (workable state) through rolls having linearly engraved (embossing) lines. Hovis further implies said rolls having grooves by showing grooves on the resultant porous films with net-like structures. In light of this and in view of Tonnvik, one of ordinary skill in the would obviously recognize to add engraved roller having grooves to shape sheet like polymer additives after extrusion and roll compacting into pre-shaped porous, net-like patterns, which facilitates the sequential comminuting process of Tonnvik.

Tonnvick is an analogous art. Hovis et al. is an analogous art, because it pertains to forming porous films with net-like structures that contains polymer additives.

Tonnvik is silent on using continuous steel belt for cooling and solidification of claims 1 and steel belt of claim 8.

Legge discloses solidifying of melting mixture of Mg and forming granules on continuous steel belt with water cooled on its underside (for facilitating cooling). Although Legge fails to disclose polymer additives, Legge is an analogous art, because it solves the same issue of cooling and solidifying granulates as present invention. Instant [0082] also shows the continuous steel belt is coolable by water being sprayed onto its underside. One of ordinary skill in the art of obviously recognize cooling before comminuting would facilitate the comminuting of particles due to the reduction of materials tackiness and entanglement cause by higher temperature.

Therefore, as to claims 1, 4-5, and 8-9, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the process disclosed by Tonnvick, applied the first compacting roller with smooth surface, added the second roller with the engraved roller having grooves in view of Hovis, and add continuous steel belt for cooling and solidification in view of Legge before the comminuting process of Tonnvik, because the resultant process would facilitates materials transfer and granulation process. Furthermore, the resultant process would yield a more efficient cooling and solidification process that facilitate the comminuting of particles due to the reduction of materials tackiness and entanglement cause by higher temperature. In addition, the pre-shaped granules would inherently be formed along

the impressed lines formed particularly via the shaping rolls of Hovis, because those rolls have embossing lines and shaping rolls having grooves that can create pre-shaped holes (Fig. 1-9). One of ordinary skill in the art would obviously recognize the granules would be formed due to pre-shaped holes (their edges are impressed lines) in the sequential comminuting process of Tonnvik. It is notified instant Ex. 3 teaches the plastic materials are rolled into coarse pieces, and granule is formed by sieved granulator.

2. Claims 2-3 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Tonnvik et al. (US 6569933) in view of Hovis et al. (US 4457775), in further view of Legge et al. (US 4457775), and further in view of Neri et al. (US 5844042), all listed on previous 892

Disclosure of Tonnvik is adequately set forth in ¶1 and is incorporated herein by reference.

Tonnvik is silent on additives of the formulae of claims 2-3. Tonnvik discloses a generic process of producing low dust granulate of polymer additives such as hindered phenol based antioxidant thioester based antioxidant.

Neri discloses a process of producing granular polymer additives (Abs., Ex.2) such as tetrakis[3-(3,5-di-t-butyl-4-hydroxyphenyl)propionyloxymethyl] methane (meets claim 2) and octadecyl-3-(3',5'-di-t-butyl-4'-hydroxyphenyl)propionate (meets claim 3), both are equivalent primary antioxidants based on hindered phenols because of the bulky groups adjacent to phenol groups (2:5-30).

Therefore, as to claims 2-3, it would have been obvious to one of ordinary skill in the art at the time of the invention to have replaced phenol based antioxidant with tetrakis[3-(3,5-di-*t*-butyl-4-hydroxyphenyl)propionyloxymethyl] methane and octadecyl-3-(3',5'-di-*t*-butyl-4'-hydroxyphenyl)propionate because of their equivalent functionality as antioxidants and produce these additives via the generic process of Tonnvik. These conditions appear to equally apply to both polymer additive productions using similar primary antioxidants. This adaptation would have obviously yielded instantly claimed invention.

As to claim 10, Tonnvik is silent on using sieve granulator.

Neri discloses a general comminuting process and condition thereof for preparing additive granules by using powder-sieving machine (sieve granulator) (Ex. 2) and results in complete pulverizing (Ex. 2). It is also known that sieving would separate and remove particles of undesired size.

Therefore, as to claim 10, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the process disclosed by Tonnvik and added the sieve granulator in view of Neri, because the resultant process would yield improved granulation and separate and remove particles of undesired size.

(10) Response to Argument

Ground 1)

The applicant has argued Tonnvik fails to teach "squeeze" rollers and "rolled out plastic" (Pg.7, ¶1-2). The examiner disagrees. Although Tonnvik is silent on

impressing, the rolling would inherently results in impressing and squeezing because of the pressure between rolls in contact with the materials comprising the plastic comprising hindered phenol based antioxidant and thioester based antioxidant transportation. One of ordinary skill in the art would obviously recognize that the materials transportation between rolls is the result of the friction between the materials and roll surface when rolls are rotating, and the friction is the results of the pressure inherently existed between the materials and roll surface and caused impressing and squeezing. The applicant fails to defeat the rationale by providing evidence. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show otherwise. A case indicating that the burden of proof can be shifted to the applicant to show that the subject matter of the prior art does not possess the characteristic relied on whether the rejection is based on inherency under 35 U.S.C. 102 or obviousness under 35 U.S.C. 103. See MPEP § 2184. In re **Fitzgerald**, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

In response to applicant's argument (Pg7, ¶3) that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See In re **McLaughlin**, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The applicant argued (Pg.8, ¶3-5) Tonnvik and Hovis are non-analogous, because Hovis is directed to making porous films. The examiner disagrees. Tonnvik is an analogous art, because it discloses a process of producing low dust granulate via rollers. Hovis is an analogous art, because it pertains to forming porous films with net-like structures that contains polymer additives via engraved rollers. Hovis discloses a process of preparing porous films with net-like patterns (1:5-15, Fig. 1-9, 1:58-68, 2:1-25) comprising polymers and other additives by passing extrudate of polymer composition (workable state) through rolls having linearly engraved (embossing) lines. Hovis further implies said rolls having grooves by showing grooves on the resultant porous films with net-like structures:



Tonnvik teaches using rollers to roll plastic materials strands (would reduce thickness and form thick films after rolling due to the inherent pressure existed between rolls) and using rotating blades to form granulates (comminuting). Hovis teaches using engraved rollers to making porous film. Hovis does not exclude comminuting. In light of all these, Tonnvik and Hovis are in the field of applicant's endeavor of forming shaped polymer articles comprising additives via rollers. It is notified instant Ex. 3 teaches the plastic materials are rolled into coarse pieces, and granule is formed by sieved granulator.

The applicant (Pg.8, ¶1) individually attacked Hovis for not teaching "comminuting". One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See MPEP-2145. Tonnvik teaches comminuting, and Hovis does not exclude comminuting.

The applicant (Pg.8, ¶1) argued the alleged improper combination of Hovis with Tonnick for lack of motivation. The examiner disagrees. The motivation to combine may be implicit and may be found in the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. *Id.* at 1366, 80 USPQ2d at 1649. See MPEP-2143. Furthermore, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Hovis discloses a process of preparing porous films with pre-shaped net-like patterns (1:5-15, Fig. 1-9, 1:58-68, 2:1-25) comprising polymers and other additives by passing extrudate of polymer composition (workable state) through rolls having linearly engraved (embossing) lines. Hovis further implies said rolls having grooves by showing grooves on the resultant porous films with net-like structures. In light of this and in view of Tonnvick, one of ordinary skill in the would obviously recognize to add engraved roller having grooves to shape sheet like polymer additives after extrusion and roll

compacting into pre-shaped porous, net-like patterns, which facilitates the sequential comminuting process of Tonnvik.

The applicant (Pg.8, ¶2) merely argued success cannot be expected by combining Tonnvik, Hovis, and Legge without showing evidence. Evidence showing there was no reasonable expectation of success may support a conclusion of nonobviousness. In re **Rinehart**, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976).

The applicant (Pg.8, ¶2) merely argued unexpected results of uniform shape. Evidence must compare with closest prior arts (in this case, Tonnvik) to show unexpected results. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show otherwise. A case indicating that the burden of proof can be shifted to the applicant to show that the subject matter of the prior art does not possess the characteristic relied on whether the rejection is based on inherency under 35 U.S.C. 102 or obviousness under 35 U.S.C. 103. See MPEP § 2184. In re **Fitzgerald**, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). Furthermore, evidence of unexpected results must be factually supported by an appropriate affidavit of declaration. See MPEP § 716.01(c). An affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a *prima facie* case of obviousness. See MPEP 716.02(e) [R-2].

Therefore, the previous 103 rejections of claims 1, 4-5, and 8-9 have been **maintained**.

Ground 2)

The applicant has argued Tonnvik, Hovis, and Legge are deficient and cannot be cured by Neri (Pg.8, ¶5-6). As set forth in the above paragraphs, Tonnvik, Hovis, and Legge are not deficient but are silent on additives of the formulae of claims 2-3 and using sieve granulator of claim 10. However, as to claims 2-3, it would have been obvious to one of ordinary skill in the art at the time of the invention to have replaced phenol based antioxidant with tetrakis[3-(3,5-di-t-butyl-4-hydroxyphenyl)propionyloxymethyl] methane and octadecyl-3-(3,5-di-t-butyl-4'-hydroxyphenyl)propionate because of their equivalent functionality as antioxidants and produce these additives via the generic process of Tonnvik. These conditions appear to equally apply to both polymer additive productions using similar primary antioxidants. This adaptation would have obviously yielded instantly claimed invention. As to claim 10, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the process disclosed by Tonnvik and added the sieve granulator in view of Neri, because the resultant process would yield improved granulation and separate and remove particles of undesired size.

Therefore, the previous 103 rejections of claims 2-3 and 10 have been **maintained**.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

sf

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